

SOROKHTIN, O.G., AVSYUK, Yu.N., KOPTEV, V.I.

Structure of the central sector of eastern Antarctica  
according to the data of seismic and gravimetric obser-  
vations. Mezhdunar. geofiz. god no.8:35-41 '60.

(MIRA 13:6)

(Antarctica--Geology, Structural)  
(Prospecting--Geophysical methods)

S/169/62/000/006/001/093  
D228/D305

AUTHORS:

Sorokhtin, O.G., Avsyuk, Yu. N. and Kondrat'yev, O.K.

TITLE:

Structure of East Antarctica's central sector according to seismic and gravimetric data. (Discourse theses)

PERIODICAL:

Referativnyy zhurnal, Geofizika, no. 6, 1962, 3-4, abstract 6A11 (V sb. Sostoyaniye i perspektivy razvitiya geofiz. metodov poiskov i razvedki polezn. iskopayemykh, M., Gostoptekhnizdat, 1961, 107-108)

TEXT: The results are given for complex seismogravimetric investigations of the ice sheet and the geologic structure of the part of Antarctica, extending 2100 km along the profile Mirnyy-Pole of Inaccessibility. The ice sheet is subdivided into a snow-firn layer, pure ice, and moraine. The velocity of elastic waves in the ice increases from 380 m/sec near Mirnyy to 400 m/sec at the pole; this is mainly explained by the decrease in the ice temperature. The ice sheet's maximum thickness is 4 km, the mean being 2.2 km. ✓

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S/169/62/000/006/004/093  
D228/D304

AUTHORS: Lyakhovitskiy, F. M. and Sorokhtin, O. G.

TITLE: Determining the elastic constants of ground by the seismic method

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 6, 1962, 7, abstract 6A 31 (Byul. nauchno-tekhn. inform. Vses. proyektno-izyskat. i n.-i. in-t "Gidroproyekt", no. 13, 1961, 64-70)

TEXT: Observations were made in Bashkiriya on the flood plain of the R. Belaya, near the village of Kazantsevo. The oscillations were stimulated by means of a horizontal blow with a 10-kg hammer on a log, buried in the ground, in a direction perpendicular to the profile. Explosions were also made by the usual method. The seismic vibrations were recorded by means of the standard station СС-26-51-Д (SS-26-51-D) and electrodynamic seismographs СПЭД-52 (SPED-52). Two seismographs were established at each point of the profile. One was fixed vertically, to record the longitudinal

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SOROKHTIN, O.G.

KAPITSA, Andrey P., SOROKHTIN, Gleg G.,

"On errors in interpretation of reflection seismic sheeting in the Antarctic"

Report to be submitted for the 13th General Assembly, INTL. Union of Geodesy  
and Geophysics (IUGG), Berkeley Calif., 19-31 Aug 63

KAPITSA, A.P., kand. geograf. nauk; SOROKHTIN, O.G., kand. fiziko-matem. nauk

Measurements of the thickness of the ice sheet during the trip along the route Vostok-Molodezhnaya. Inform. biul. Sov. antark. eksp. no.51:19-22 '65.

Relief of the ice sheet and subglacial floor of Queen Maud Land. Ibid.:23-26 (MIRA 18:9)

1. Moskovskiy gosudarstvennyy universitet (for Kapitsa).
2. Devyataya sovetskaya antarkticheskaya ekspeditsiya (for Sorokhtin).

ZOTIKOV, I.A., kand. tekhn. nauk; KAPITSA, A.P., kand. geograf. nauk;  
SOROKHTIN, O.G., kand. fiziko-matem. nauk

Thermal regime of the ice sheet of central Antarctica. Inform.  
biul. Sov. antark. eksp. no.51:27-32 '65. (MIRA 18:9)

1. Devyataya sovetskaya antarkticheskaya ekspeditsiya (for  
Zotikov, Sorokhtin). 2. Moskovskiy gosudarstvennyy universitet  
(for Kapitsa).

I 26752-88 EWI(1)/EWA(h) GW

ACC NR: AP6009538

(A,N)

SOURCE CODE: UR/0413/66/000/005/0074/0074

AUTHORS: Sorokhtin, O. G.; Borkovskiy, G. M.; Taukernik, V. B.; Neymark, G. S.; Dolinskiy, Yu. D.

ORG: none

TITLE: Multichannel seismic station with intermediate digital magnetic recording. Class 42, No. 179482 /announced by All-Union Scientific Research Institute of Geophysical Exploration Methods (Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki)/

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 74

TOPIC TAGS: seismologic station, computer application

ABSTRACT: This Author Certificate presents a multichannel seismic station with intermediate digital magnetic recording. The station contains seismic detectors, amplifiers, channel commutators, level setting devices, an analog to digital code converter, and a magnetic recorder. To provide for possible processing of the information on digital and analog computers, a digital code to analog converter, a channel distributor, and a device for selection and recording of the analog information are connected in series to the output of the reproduction amplifier of the magnetic recorder (see Fig. 1). To broaden the dynamic range of the received

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UDC: 550.340.84

L 26792-66

ACC NR: AP6009538

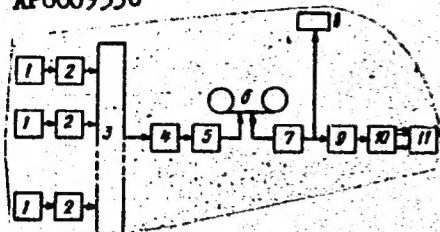


Fig. 1. 1 - seismic detectors; 2 - pre-amplifiers; 3 - channel commutator; 4 - basic amplifier; 5 - direct digital converter; 6 - magnetic recorder; 7 - reproduction amplifier; 8 - digital computer; 9 - digital to analog converter; 10 - channel distributor; 11 - recorder.

signals, a basic amplifier is connected between the channel commutator and the direct digital converter. Orig. art. has: 1 diagram.

SUB CODE: 08, 09/

SUBM DATE: 30Dec63

Cord 2/2dda



SCROKIN, A.

Prepare roads for the transportation of agricultural products of  
the new crop. Avt.dor. 25 no.7:1-2 J1 '62. (MIRA 15:8)

1. Zamestitel' nachal'nika Glavnogo dorozhnogo upravleniya.  
(Farm produce--Transportation)

SOROKIN, A.

Crossing borders. NTO 4 no.12:50-51 D '62. (MIRA 16:1)

1. Predsedatel' Tsentral'nogo pravleniya Nauchno-tekhnicheskogo  
obshchestva neftyanoy i gazovoy promyshlennosti.  
(Petroleum industry--Societies, etc.)  
(Gas, Natural)

SOROKIN, A.; TREBIN, P.A.; CHIRCHAK, L.M.; POPOV, A.

Foreign technology. Gaz. prom. 2 no.4:50-54 '63.

(MIRA 17:10)

SOROKIN, A.A.

✓3610 THE DECAY SCHEME OF  $Zr^{91}$  AND  $Nb^{91}$  N. N. Dolynin,  
A. A. Sorokin, N. B. Poraionov, and V. S. Shpinel.

(Lomonosov Moscow State Univ.). Izvest. Akad. Nauk  
S.S.S.R. Ser. Fiz. 20, 913-24(1956) Aug. (In Russian)

During the conference on Nuclear Spectroscopy in 1955, a report was made describing the studies of  $Zr^{91}$  and  $Nb^{91}$  decay scheme which had been investigated by the method of  $\beta$ - $\gamma$  and  $\gamma$ - $\gamma$  coincidences. The method permitted the separation of the soft  $\beta$  spectra for  $Zr^{91}$  and  $Nb^{91}$  from the total  $\beta$  spectra of  $Zr^{91} + Nb^{91}$ , and revealed the  $\gamma$ - $\gamma$  coincidence with the intensity of  $\sim 10\%$ . The energy of cascade quanta, evaluated by the absorption method was found to be  $\sim 0.7$  Mev and  $>1$  Mev. To obtain a more accurate result the work has been repeated and measurements checked on improved apparatus and the results of the work are given.

(R.V.J.)

SOROKIN, A. A.

19 19 19  
✓ Decay scheme for zirconium-97 and niobium-97. N. N.  
Udvalgin, A. A. Sorokin, N. V. Isaculov, and V. S.  
Shpinel (Moscow State Univ., U.S.S.R.). Nuclear Phys.  
2, 987-108 (1956/57).—See C.A. 51, 4376. R. W. Fink

*Handwritten signature/initials*

SOV/120-59-1-7/50

AUTHORS: Ovechkin, V. V. and Sorokin, A. A.

TITLE: A Double-Crystal Compton  $\gamma$ -Spectrometer with a Large Solid Angle (Komptonovskiy dvukhkristal'nyy gamma-spektrometr s bol'shey svetosiloy)

PERIODICAL: Priory i tekhnika eksperimenta, 1958, Vol 6, Nr 6, pp 36-40 (USSR)

ABSTRACT: The interpretation of hard  $\gamma$ -spectra obtained with scintillation spectrometers using crystals of "usual" dimensions is difficult because in addition to photopeaks one also finds wide Compton distributions and peaks due to pair formation. The effect may be reduced by using large crystals in which total absorption of  $\gamma$ -quanta takes place. Another useful method is the double-crystal Compton spectrometer suggested by Hofstadter and McIntyre (1) in 1950. The disadvantage of the latter method is that it is necessary to collimate the primary beam of  $\gamma$ -rays and also to ensure that they do not reach the second crystal directly (Fig.1). The present authors have developed a Compton  $\gamma$ -spectrometer which does not use a collimator and a description of this instrument is now given. The removal of the collimator increased the solid angle by a factor of 100-1000, the resolving power being the same. In the present method the two

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SOV/120-59-1-7/50

A Double-Crystal Compton  $\gamma$ -Spectrometer with a Large Solid Angle

crystals are placed as closely as possible to each other and the  $\gamma$ -source is placed between them (Fig.2). Such a geometry increases the solid angle of the instrument compared with the classical arrangement which includes the collimator. It is only necessary to exclude the background due to cascade and annihilation  $\gamma$ -quanta and this is done by means of a single channel kicksorter which follows the photomultiplier of the second crystal. The threshold and "window" of this analyzer is suitably adjusted to exclude this defect. The theory of the Compton effect shows that above 0.5 Mev the energy of  $\gamma$ -quanta scattered through  $180^\circ$  is approximately constant and tends to the limiting value  $1/2 (m_0 c^2)$  (Fig.3). The

dependence of energy on angle in such backward scattering events is very small. In order to find a suitable position and width for the "window" of the kicksorter, calibrating measurements of the number of coincidences were carried out, using  $\text{Cs}^{137}$  and  $\text{Zn}^{65}$  for two fixed values of the threshold of the discriminator following the photomultiplier of the first crystal and varying the threshold of the second crystal.

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A Double-Crystal Compton  $\gamma$ -Spectrometer with a Large Solid Angle

kicksorter whose "window" was about 1 volt. Fig.4 shows that the predominating part of scattered  $\gamma$ -quanta have energies lying in a very narrow energy range (60 Kev) and the position of the peaks is in accordance with the theory. By fixing the "window" of the second crystal kicksorter between 150 and 250 Kev and varying the threshold of the first crystal discriminator one can carry out an analysis of  $\gamma$ -quanta above 0.5 Mev by counting the number of coincidences. In order to remove the background completely two measurements must be carried out, one of which is as described above and the other includes a lead screen between the source and the second crystal (Fig.8). There is 1 table, 9 figures and 5 references, of which 3 are Soviet, 1 German and 1 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki (Scientific Research Institute for Nuclear Physics, Moscow State University)

SUBMITTED: January 2, 1958.

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SOV/120-59-1-8/50



AUTHORS: Sorokin, A. K., Novikov, L. S., SOV/32-24-8-28/43  
Pavlotskaya, F. I.

TITLE: The Use of the Luminescence Spectrometer in Identifying  
Radioactive Isotopes (Primeneniye lyuminestsentnogo  
spektrometra dlya identifikatsii radioizotopov)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 8, pp. 997-1000  
(USSR)

ABSTRACT: Fast and precise identification is especially important in  
the separation of the radioactive isotopes of the rare earth  
elements. The usual methods based on the half-life of  
 $\beta^-$  and  $\beta^+$ -radiation is inexact and time-consuming. The  
luminescence spectrometer was therefore employed to speed up  
this operation. The separation of the radioactive isotopes  
was accomplished using an ion exchange column and the sum of  
the radioactivity was determined by a previously-described  
method. "Dowex-50" was the cation-exchanger used. The  
identification of the isotopes was accomplished by studying  
the gamma spectrum of each chromatographic ring. The  
experimental procedure is given along with several spectrograms

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The Use of the Luminescence Spectrometer in  
Identifying Radioactive Isotopes

SOV/32-24-8-28/43

for cerium and ytterbium. Tables of the radioactive rare  
earths identified in these experiments are also given. As  
compared to the Geiger counter method this method is faster  
and more reliable. There are 4 figures, 1 table, and 3  
references, 2 of which are Soviet.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I.  
Vernadskogo (Institute for Geochemistry and Analytical  
Chemistry imeni V. I. Vernadskiy)

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OVECHKIN, V.V.; SOROKIN, A.A.

Compton two-crystal gamma-spectrometer with high illuminating power.  
Prib.i tekhn.eksp. no.1:36-40 Ja-P '59. (MIRA 12:4)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo  
gosudarstvennogo universiteta.  
(Spectrometer) (Gamma rays--Spectra)

85859

S/048/59/023/012/003/009  
B006/B060

24.6810  
AUTHORS: Bedesku, A., Mitrofanov, K. P., Sorokin, A. A., Shpinel', V.S.  
TITLE: Investigation of the  $^{131}_{79}\text{Te}$  Decay Scheme ( $T_{1/2} = 30$  Hours)  
PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,  
Vol. 23, No. 12, pp. 1434 - 1444

TEXT: The knowledge, how far the neutron levels  $3s_{1/2}$ ,  $1h_{11/2}$ , and  $2d_{3/2}$  are occupied in a number of iodine isotopes, plays an important part in nuclear shell theory. According to it the authors investigated thoroughly the decay scheme of  $^{131}_{79}\text{Te}$ , of which  $\beta$ -decay excites the levels of the isotope  $^{131}_{53}\text{J}$ . The specimen was prepared by bombardment of highly purified metallic Te with thermal neutrons. For  $^{130}\text{Te}$ , occurring with an abundance of 34.49% in the natural isotopic mixture, a  $(n, \gamma)$ -reaction was initiated producing simultaneously two  $^{131}\text{Te}$  isomers: one with a half-life of 30 h (activation cross-section  $< 8$  mb) and another with a half-life of

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Investigation of the  $\text{Te}^{131}$  Decay Scheme  
( $T_{1/2} = 30$  Hours)

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B006/B060

25 min (0.22 b). After the establishment of an equilibrium between both isomers and after the total decay of the 25 min -  $\text{Te}^{131}$  created directly by the  $(n, \gamma)$  process, the specimen was dissolved in concentrated nitric acid. The  $\text{J}^{131}$ , created by  $\text{Te}^{131}$  decay, was extracted by carbon tetrachloride. Tellurium dioxide served as source with low specific activity due to the small activation cross-section of the 30 h -  $\text{Te}^{131}$ . The  $\gamma$ -spectrum of this specimen purified of iodine, was measured by a scintillation  $\gamma$ -spectrometer. The measurements took several days because the contribution of the long-lived Te-isotopes and of other impurities had to be estimated. Fig. 1 shows a section of the  $\text{Te}^{131}$ -spectrum (energy range 500 - 1,400 kev) and Fig. 2 shows the same for the range of 700 - 2,400 kev. Data on the relative intensities of the lines are shown in Table 1 (related to the intensity of the 780 kev line - 100). Transitions with 2.2 and 1.85 Mev were found, and instead of the 1.15 Mev transition (Ref. 6) two with 1.12 and 1.20 Mev were found. A telescope with smaller solid angle was applied to the investigation of the hard region of the spectrum, and the transitions with 1.6, 1.85, and 2.2 Mev

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Investigation of the  $\text{Te}^{131}$  Decay Scheme  
( $T_{1/2} = 30$  Hours)

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were found to correspond to transitions and do not occur by superpositions. Fig. 3 shows the spectrum of the conversion electrons in the range of 600 - 1,300 kev, the L- and K-photopeaks corresponding to  $\gamma$ -transitions with 780, 850, 925, 1140, and 1220 kev. Further the  $\beta$ - $\gamma$ - and the  $\gamma$ - $\gamma$ -coincidence spectra were investigated. Fig. 4 shows the block diagram of the equipment applied to the measurement of the so-called "summing coincidences". The spectrum of  $\gamma$ -rays accompanied by  $\beta$ -particles is shown in Fig. 5 for  $E_\beta > 1$  Mev and in Fig. 6 for  $E_\beta > 1.4$  Mev. The best noticeable peak is at 147 kev; it is assumed that this peak corresponds to the first excited level of  $J^{131}$ . Further details of the  $\gamma$ - $\beta$ -coincidence spectrum are to be seen in Figs. 7 and 8. Figs. 9, 10, and 11 show the weak part of the  $\gamma$ -spectrum in coincidence with 780 kev  $\gamma$ -rays, the spectrum of the "summing coincidences" ( $E_{\text{sum}} = 770$  kev) and the part of the electron conversion spectrum of  $\text{Te}^{131}$  with the 780 and 850 kev lines. The 780 kev transition ends in the ground state of  $^{131}_{53}\text{Te}$ . For both these aforementioned lines the multipolarities E1 and E2 are assumed, and the internal

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21(8)

AUTHORS:

Forafontov, N. V., Sorokin, A. A.

SOV/56-36-1-54/62

TITLE:

On the Problem of the Scheme of the Decay of  $Ce^{144}$  (K voprosu o skheme raspada  $Ce^{144}$ )

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 330-331 (USSR)

ABSTRACT:

For the purpose of further precisising the decay scheme of  $Ce^{144}$ , the authors carried out measurements of  $\gamma$ - $\gamma$ -coincidences and of  $e^-$ - $\gamma$ -coincidences. The  $\gamma$ - $\gamma$ -coincidences were measured by means of a luminescence spectrometer for coincidences. A diagram shows the spectrum of  $Ce^{144}$  and the spectrum for coincidences with  $\gamma$ -rays within the range of 80 kev. The spectrum of coincidences contains peaks which correspond to the energies of X-ray radiation of Pr and to  $\gamma$ -rays of an energy of  $\sim 53$  kev. The  $\sim 46$  kev peak observed in the spectrum of coincidences corresponds to the Compton (Kompton)-electrons originating from the 134 kev  $\gamma$ -rays and is caused by scattering from a crystal into a crystal. When adjusting the window of the analyzer to the 134 kev peak, it is not possible to detect any noticeable peaks in the spectrum of coincidences up to 80 kev. For the purpose

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On the Problem of the Scheme of the Decay of  $Ce^{144}$ 

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of estimating the upper limit of the intensity of the suggested  $\gamma$ - $\gamma$ -cascade 41-143 keV, comparative measurements were carried out for  $Ce^{144}$  and  $Sm^{153}$ . The intensity of the  $\gamma$ -quanta in the cascade with the 134 keV line in  $Ce^{144}$  amounts at the utmost to the two thousand fivehundredth part ( $< 4 \cdot 10^{-4}$ ) in relation to the transition with 134 keV. This estimate is determined by the statistical accuracy of measurements. The lack of coincidences between the  $\gamma$ -quanta induced the authors to investigate the coincidences of the 134 keV quantum with the 35 keV conversion line to be observed in the primary  $\beta$ -spectrum (which was identified as L-conversion of the 41 keV transition). A diagram shows the part-section of the  $\beta$ -spectrum of coincidences with the 134 keV  $\gamma$ -line found by one of these measurements. According to these measurements the 41 L conversion line is identical with the 134 keV  $\gamma$ -line. All data obtained by the present paper agree with the decay scheme assumed by the author in one of his earlier papers (Ref 7), which also contains the level with 175 keV. In this connection it must be assumed that the transition with the energy of 41 keV was completely converted. For multipoles of not less than E2 and

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On the Problem of the Scheme of the Decay of  $Ce^{144}$

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even for E2 with an admixture of M1 the conversion coefficient is nearly equal to 1, which is in full agreement with the measurements of  $\gamma$ - $\gamma$ - and  $e^-$ - $\gamma$ -coincidences carried out by the authors. In conclusion, the authors thank A. G. Khudo-verdyan and L. P. Zharebtsova for assisting in carrying out the measurements. There are 2 figures and 9 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: September 22, 1958

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21 (8)

AUTHORS:

Bedesku, A., Mitrofanov, K. P.,  
Sorokin, A. A., Shpinel', V. S.

SOV/56-37-1-55/64

TITLE:

The Decay of  $\text{Te}^{131}$  ( $T_{1/2} = 30$  hours) (Raspad  $\text{Te}^{131}$  ( $T_{1/2} = 30$  chas))

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37,  
Nr 1, pp 314 - 315 (USSR)

ABSTRACT:

$\text{Te}^{131}$ -decay has already been investigated in a number of papers, and in reference 3 also a decay scheme, basing upon the energy equilibrium in  $\beta$ - and  $\gamma$ -transitions was published. The authors of the present "Letter to the Editor" have set up an exact scheme of the lower levels of  $\text{J}^{131}$  (excited in the decay of the isomer  $\text{Te}^{131}$ ) for which purpose a number of new data concerning the  $\gamma$ -transitions in  $\text{Te}^{131}$  were used. The investigations were carried out in a magnetic lens spectrometer and a scintillation spectrometer connected in coincidence. The  $\text{Te}^{131}$ -source was obtained by the irradiation of metallic tellurium of high chemical purity by slow neutrons. The measured  $\gamma$ -intensities at the en-

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The Decay of  $\text{Te}^{131}$  ( $T_{1/2} = 30$  hours)

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ergies 780, 850, 925, 1140, 1220, 1600, 1850 and 2200 keV amounted to 100, 40, 15, 35, 25, 5, 2, 0.5 % in the same order. The transitions 80, 100, 147, 240, 330, 440 and 590 keV were found both in single spectra and in the spectra of  $\beta\gamma$ - and  $\gamma\gamma$ -coincidences; (147 keV - first excited state of  $\text{J}^{131}$ , 780 keV - ground state). Table 2 shows the results obtained by determining the conversion coefficients onto the K-shell:

$E_\gamma$ [keV]	$\alpha_k^{\text{exp}} \cdot 10^3$	$\alpha_k^{\text{theor}} \cdot 10^3$			Identification
		E1	E2	M1	
780	$0.8 \pm 0.2$	0.84	2.3	3.0	E1
850	$1.6 \pm 0.6$	0.71	1.9	2.5	E2 (+ M1)
147	$260 \pm 50$	-	330	220	M1 + E2

The life-time of the 147 keV level was determined as amounting to  $T_{1/2} = (8 \pm 1) \cdot 10^{-10}$  sec., which is in good agreement with reference 5. The decay scheme of  $\text{Te}^{131}$  found by the authors is

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The Decay of  $\text{Te}^{131}$  ( $T_{1/2} = 30$  hours)

SOV/56-37-1-55/64

shown by a figure. There are 1 figure, 2 tables, and 6 references, 1 of which is Soviet.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

SUBMITTED: April 8, 1959

Card 3/3

S/030/61/000/005/012/012  
B105/B202

AUTHORS: Parfenova, V. P., Sorokin, A. A.

TITLE: Problems of nuclear spectroscopy

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 5, 1961, 119-120

TEXT: The authors give a report on the 11th vsesoyuznaya soveshchaniya po yadernoy spektroskopii (All-Union Conference on Nuclear Spectroscopy) which took place in Riga from January 25 to February 2, 1961. Since 1951 such annual conferences have been organized in the USSR in which the most important results are discussed and the directions of further research are outlined. The conference was attended by scientists from Moscow, Leningrad, Kiev, Riga, and other towns of the country. Great attention was paid to the theory of deformed nuclei. In recent years, a group of theoretical scientists headed by A. S. Davydov developed a model of the non-axial nuclei of the shape of a three-axial ellipsoid. L. K. Peker reported on the collective motions of deformed odd-odd nuclei. On the basis of the theory of the superfluid nucleus V. G. Solov'yev calculated the energies and characteristics of the levels of some nuclei. Decay

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Problems of nuclear spectroscopy

S/030/61/000/005/012/012  
B105/B202

schemes of radioactive nuclei were discussed which were obtained with the synchrocyclotron of the Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research) at Dubna. Collaborators of three institutes reported on the study of the Moessbauer effect: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo universiteta (Scientific Research Institute of Nuclear Physics of Moscow University), Joint Institute of Nuclear Research, Institut atomnoy energii Akademii nauk SSSR (Institute of Atomic Energy of the Academy of Sciences USSR). A special meeting was devoted to the technique of nuclear spectrometry, where a number of new magnetic  $\beta$ -spectrometers of new design were described. Ya. A. Smorodinskiy gave a survey of the present state of studies of  $\beta$ -decay. Finally, it was stated that for a further development of the theory, the experiments must be more precise; this requires the development of more accurate methods.

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S/048/60/024/012/009/011  
B019/B056

AUTHORS: Sorokin, A. A., Bedesku, A., Klimentovskaya, M. V.,  
Kryukova, L. N., Mitrofanov, K. P., Murav'yeva, V. V.,  
Rybakov, V. N., Chandra, G., and Shpinel', V. S.

TITLE: Study of the Decay of  $\text{Te}^{118}$  and  $\text{Te}^{119}$  and the Level Scheme  
of  $\text{Sb}^{119}$

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,  
Vol. 24, No. 12, pp. 1484-1491

TEXT: The present paper was read at the 10th All-Union Conference on Nuclear Spectroscopy, which was held in Moscow from January 19 to January 27, 1960. The neutron-deficient tellurium isotopes were obtained by a one and a half hours' irradiation with 660-Mev protons at OIYaI (Joint Institute of Nuclear Research). The tellurium was chemically separated 1-2 days after irradiation. The measurements of the  $\gamma$ -spectrum and the  $\gamma$ - $\gamma$  coincidences were carried out by means of a scintillation spectrometer. The  $\beta$ - $\gamma$  coincidences were measured by means of a  $\beta$ -spectro-

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Study of the Decay of  $\text{Te}^{118}$  and  $\text{Te}^{119}$  and  
the Level Scheme of  $\text{Sb}^{119}$

S/048/60/024/012/009/011  
B019/B056

meter, which was connected with a coincidence circuit with a  $\gamma$ -spectrometer. The  $\beta^+$  spectrum of  $\text{Te}^{118}$  consists essentially of a component with its upper edge at  $2700 \pm 50$  kev. As shown by an exact investigation, this  $\beta^+$ -spectrum is furnished by the isotope  $\text{Sb}^{118}$ , which is in equilibrium with  $\text{Te}^{118}$ . On the basis of these results, the authors assume that the  $\text{Te}^{118}$  and  $\text{Sb}^{118}$  decay mainly into the ground state of the daughter nuclei. For the ground state of  $\text{Sn}^{118}$ ,  $0^+$ , and for the initial state of  $\text{Sb}^{118}$ ,  $0^+$  or  $1^+$  is given.  $6.1 \pm 0.1$  days are given as the half-life of  $\text{Te}^{118}$ . From investigations carried out with the scintillation- $\gamma$ -spectrometer, in which  $\text{Sb}^{118}$ ,  $\text{Te}^{121}$ , and  $\text{Te}^{123}$  were detected, the authors are able to state that all  $\gamma$ -transitions having a half-life of 4.75 days are related to the decay of  $\text{Te}^{119}$ . They are transitions between the  $\text{Sb}^{119}$  levels. From a thorough study of these lines and the angular correlation of the  $\gamma$ -radiation, the authors were able to set up the decay scheme of  $\text{Te}^{119}$  shown in Fig. 4. Finally,

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Study of the Decay of  $\text{Te}^{118}$  and  $\text{Te}^{119}$  and  
the Level Scheme of  $\text{Sb}^{119}$

S/048/60/024/012/009/011  
B019/B056

the authors deal with the  $\text{Te}^{119}$  isomers. They arrive at the conclusion that the isomer of  $\text{Te}^{119}$  with a half-life of 4.75 days is an excited isomeric state with the spin  $11/2^-$  and that the state of  $\text{Te}^{119}$  with a half-life of 12 hours is the ground state. The authors thank V.N. Mekhedov for producing the source, and L. Vasina, B. A. Komissarova, and Chzhen Tszun-shuan, students of physics at MGU, for carrying out measurements and evaluating experimental results. There are 10 figures and 14 references, 10 Soviet, 3 US, and 1 Dutch.

Card 3/4

25

S/048/60/024/012/009/011  
B019/B056

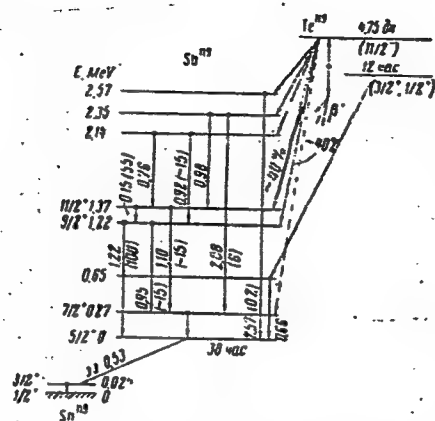


Рис. 4. Схема распада  $Te^{119}$ . В скобках приведены относительные интенсивности  $\gamma$ -переходов

Card 4/4

SOROKIN, A.A.; MITROFANOV, K.P.

Investigating the decay chain for  $Gd^{147}$ . Izv. AN SSSR. Ser. fiz.  
25 no.7:799-807 J1 '61. (MIRA 14:7)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo  
gosudarstvennogo universiteta im. M.V. Lomonosova.  
(Gadolinium--Decay)

SOROKIN, A.A.; MITROFANOV, K.P.

Investigating the decay chain for  $Gd^{149}$ . Izv. AN SSSR. Ser.  
fiz. 25 no.7:808-812 J1 '61. (MIRA 14:7)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo  
gosudarstvennogo universiteta im. M.V. Lomonosova.  
(Gadolinium--Decay)

STRIGACHEV, A.T.; NOVIKOV, L.S.; SOROKIN, A.A.; KHALKIN, V.A.; TSVETKOVA,  
N.V.; SHPINEL', V.S.

Investigating neutron-deficient Tb isotopes. Izv. AN SSSR. Ser.  
fiz. 25 no.7:813-825 J1 '61. (MIRA 14:7)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo  
gosudarstvennogo universiteta im. M.V. Lomonosova i Ob "yedinennyy  
institut yadernykh issledovaniy.  
(Terbium--Isotopes)

BEDESKU, A.; KALINKINA, O.M.; SOROKIN, A.A.; FORAFONTOV, N.V.;  
SHPINEL', V.S.

Decay scheme of  $\text{Te}^{131m}$ . Zhur. eksp. i teor. fiz. 40 no.1:91-100  
Ja '61. (MIRA 14:6)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo  
universiteta.

(Tellurium—Decay)

S/048/62/026/002/016/032  
B106/B108

AUTHORS: Strigachev, A. T., Sorokin, A. A., and Shpinel', V. S.

TITLE: Study of the terbium fraction

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,  
v. 26, no. 2, 1962, 252-258

TEXT: The terbium fraction, isolated radiochemically from a tantalum target after 660-Mev proton bombardment in the synchrocyclotron of the OIYaI was studied with a  $\beta$ -spectrometer БПП (BPP) (double-focusing) by the method of  $\gamma\gamma$ -coincidences. The radiation source and the measuring device have been described before (Izv. AN SSSR. Ser. fiz., 25, no. 7, 813 (1961)). The spectrum of the conversion electrons of the Tb fraction was measured with a resolution of 1-2% in the range of 10-100 kev, and with 0.4% dissolution in the range of 530-3000 kev. (Tables 1, 2). The K and L lines of the  $\gamma$ -transition with 108.3 kev were used to graduate the spectrometer in the range of 10-100 kev. The spectrum of the Tb fraction was investigated up to conversion electron energies of  $\sim 3$  Mev. Above 1 Mev, however, no conversion lines could be observed. The spectrometer

Card 1/1

## Study of the terbium fraction

S/048/62/026/002/016/032  
B106/B108

was graduated for the range of up to 1 Mev according to the conversion lines of the 585.5 and 614.7 kev  $\gamma$ -transitions of  $Tb^{152}$ . The unidentified transitions with the energies 675.5, 690.5, 751, and 764 kev belong to either  $Tb^{151}$  or  $Tb^{152}$ . Measurement of the spectra of the  $\gamma\gamma$ -coincidences was begun 24 hr after irradiation of the tantalum target. At that time the main portion of radiation was emitted from the isotopes  $Tb^{151}$  and  $Tb^{152}$ . The  $\gamma$ -transitions 108.3, 180.1, 192.1, 251.3, 287.3, 442.5, 478.3, 600, 720,  $\sim 870$  kev pertain to the decay of  $Tb^{151}$ . When the coincidence circuit was controlled by pulses, corresponding to the energy range of 105-115 kev peaks occurred in the  $\gamma$ -spectrum at 460, 590, and 700 kev. The peaks at 460 and 700 kev were composite. With control pulses corresponding to the energy ranges 240-260 kev and 275-295 kev, peaks occurred in both cases at 460 and 590 kev. From these and earlier data the decay scheme of  $Tb^{151}$  corresponding to the level scheme of  $Gd^{151}$  could be constructed (Fig. 5). Though this scheme is incomplete, it can be concluded that the levels of  $Gd^{151}$  are no rotation levels. Obviously, the  $Gd^{151}$  nuclei still are approximately spherical. In this case, the ground state of  $Gd^{151}$  may be  $f_{7/2}$  or  $h_{9/2}$ . Preference is given to the ground

Card 2/1 3



Study of the terbium fraction

S/048/62/026/002/016/032  
B106/B108

state  $f_{7/2}$  in a paper by N. M. Anton'yeva et al. (Izv. AN SSSR. Ser. fiz., 22, no. 2, 135 (1958)). Possibly the first excited level with 108.3 keV is of the  $h_{9/2}$  type. This assumption does not contradict to the

multipolarity  $M1 + E2$  of the 108.3 keV  $\gamma$ -transition. The authors thank the team of the LYAP OIYaI under supervision of V. A. Khalkin for separating the Tb fraction, and K. Ya. Gromov and I. A. Yutlandov for assistance. There are 5 figures, 3 tables, and 10 references: 5 Soviet and 5 non-Soviet. The three most recent references to English-language publications read as follows: Toth K. S., Bjørnholm S., Jørgensen M. H., Nielsen O. B., Skilbreid O., Svanheden A., J. Inorg. and Nucl. Chem., 14, 1/2, 1 (1960); Toth K. S., Nielsen O. B., Skilbreid O., Nucl. Phys., 19, No. 4, 389 (1960); Toth K. S., Bjørnholm S., Jørgensen M. H., Nielsen O. B., Skilbreid O., Phys. Rev., 116, 1, 118 (1959).

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki  
Moskovskogo gos. universiteta im. M. V. Lomonosova  
(Scientific Research Institute of Nuclear Physics of Moscow  
State University imeni M. V. Lomonosov). Ob'yedinennyy  
institut yadernykh issledovaniy (Joint Institute of  
Nuclear Research)

Card 3/13

The  $Zr^{97}$  decay scheme

S/056/62/043/006/016/067  
B102/B104

scintillation spectrometer and a NaI(Tl)-crystal spectrometer with  $\phi\gamma$ -24 (FEU-24) photomultiplier and a AM-100 (AI-100) 100-channel pulse-height analyzer. The  $\gamma$ -lines 1.12 Mev ( $Zn^{65}$ ) 2.62 Mev ( $Te^{208}$ ) and 2.76 Mev ( $Na^{24}$ ) served as standards. The above-mentioned higher levels were found to be at 1.15, 1.35, 1.75, 1.84, and 2.1 Mev. The suggested  $Zr^{97}$ - $Nb^{97}$  decay scheme is shown in Fig. 5. Its characteristics are discussed in detail. The characteristics of the 1.15 and 1.35 Mev levels could not be determined. The absence of transitions from them to the 0.745-Mev level indicates spins of above  $3/2$ . The decay scheme suggested eliminates the contradictions that arose between Ref. 1 and Ref. 2. There are 5 figures and 1 table.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

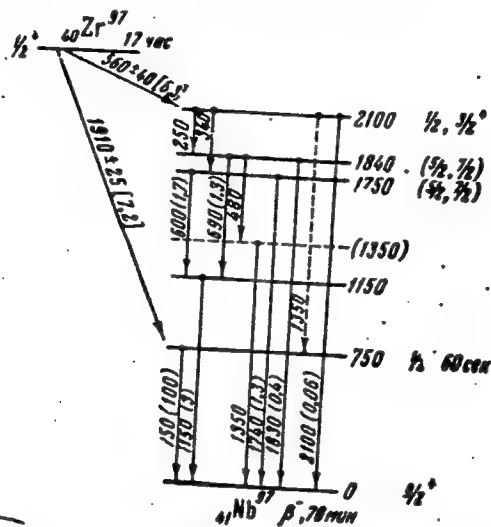
SUBMITTED: July 18, 1962

Card 2/3

The  $Zr^{97}$  decay scheme

S/056/62/043/006/016/067  
B102/B104

Fig. 5. Legend:  $sec \equiv sec$ ;  $min \equiv min$ ,  $hr \equiv hr$ .



Card 3/3

GRIGOROV, K. Ya.; DANAGULYAN, A. S.; MURAV'YEVA, V. V.; INKITYUK, L. N.; SOROKIN, A. A.  
SHTAL', M. Z.

5

"Investigations of the Decay of  $\text{Nd}^{139m}$  ( $t_{1/2} = 5.5$  hr.)."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

OIYaI (Joint Inst Nuclear Res)

SOROKIN, A. A.; SHTAL', M. Z.; RYBAKOV, V. N.

"Concerning the Decay Scheme of  $\text{Te}^{119}$  ( $t_{1/2} = 16 \text{ hr.}$ )."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

MGU (Moscow State Univ)

L 13944-65 EWT(m)/EWP(b) SSD/AFWL JD/JG  
ACCESSION NR: AP4047889

S/0056/64/047/004/1232/1234

AUTHOR: Sorokin, A. A.

TITLE: Lifetime of 114-keV level in the Pr-139 nucleus <sup>19</sup> B

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,  
no. 4, 1964, 1232-1234

TOPIC TAGS: praseodymium, <sup>27</sup> level lifetime, time to pulse height  
converter, forbidden transition

ABSTRACT: The half life of the 114-keV first excited state in the  
Pr<sup>139</sup> nucleus, the energy of which was measured by the author and  
co-workers earlier (Izv. AN SSSR seriya fiz. v. 27, 1357, 1963;  
ZhETF v. 47, No. 11, 1964) was measured by the delayed-coincidence  
method with the aid of a time-to-pulse-height converter. The pro-  
duction of the sources was also described earlier. Coincidences

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L 13944-65

ACCESSION NR: AP4047889

were registered between the conversion of electrons of 114 keV transition and the hard  $\gamma$  quanta that excited this level. The time-to-pulse-height converter is similar to that described by G. Jones (J. Sci. Instr. v. 37, 318, 1960). The value obtained for the lifetime was  $T_{1/2} = 2.5 \pm 0.2 \times 10^{-9}$  sec. This corresponds to hindrance of M1 transitions to the ground state by a factor  $f = 310$ , compared with the Weiskopff single-particle estimate. Forbidden M1 transitions to the ground states of the neighboring isotopes  $\text{Pr}^{141}$  and  $\text{Pr}^{143}$

are characterized by approximately the same hindrance factor. The results are interpreted as an indirect confirmation of the assignment  $7/2^+$  to the 114-keV level, previously made by the authors. Orig. art. has: 1 figure and 4 formulas.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University)

Card 2/3

L 13944-65

ACCESSION NR: AP4047889

SUBMITTED: 30Apr64

SUB CODE: NP

NR REF SOV: 004

ENCL: 00

OTHER: 004

Card 3/3



L 16095-65 EWT(m) DIAAP/ESD(t)/ESD(gs)/SSD/APWL  
 S/0056/64/047/005/1644/1652  
 ACCESSION NR: AP5000308

AUTHORS: Gromov K. Ya.; Danagulyan, A. S.; Nikityuk, L. N.;  
 Murav'yeva, V. V.; Sorokin, A. A.; Shtal', M. Z.; Shpinel', V. S. B

TITLE: Investigation of the decay of neutron-deficient isotopes  
 of neodymium. New isotope Nd-138

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,  
 no. 5, 1964, 1644-1652

TOPIC TAGS: neodymium, isotope, level scheme, conversion electron  
 spectrum, gamma gamma coincidence, gamma transition

ABSTRACT: This is a continuation of earlier work by a group  
 headed by one of the authors (Gromov, Izv. AN SSSR ser. fiz. v. 27,  
 1357, 1963) on the decay of Nd<sup>139m</sup>. Neutron deficient neodymium  
 isotopes were obtained by bombarding tantalum or erbium-oxide tar-  
 gets with 660 MeV protons in the synchrocyclotron of the OIYaI. The

Card 1/5

L 16095-65

ACCESSION NR: AP5000308

3  
spectra of the conversion electrons,  $\gamma$  rays, and  $\gamma\gamma$  coincidences were investigated for the 5.5-hr activity of Nd with a double focusing  $\beta$  spectrometer ( $\pi/2$  angle). The results show that most  $\gamma$  transitions observed in this activity belong to  $\text{Pr}^{139}$  excited during the decay of  $\text{Nd}^{139m}$ . A decay scheme for the  $\text{Nd}^{139m} \rightarrow \text{Pr}^{139}$  system is deduced from the experimental results and is shown in Fig. 1 of the enclosure. In addition, experimental proof of the existence of the isotope  $\text{Nd}^{138}$ , with a half life of approximately 5 hours, is deduced from the presence in the conversion-electron spectrum of an EO transition line in the  $\text{Ce}^{138} \rightarrow \text{Pr}^{139} \rightarrow \text{Ce}^{138}$  decay. The decay scheme of the latter chain is shown in Fig. 2 of the enclosure. "The authors thank L. N. Kryukova for help and to the group of chemists of LYAP OIYAI for separating the neodymium fraction." Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University)

Card 2/5

L 16095-65

ACCESSION NR: AP5000308

SUBMITTED: 30Apr64

ENCL: 02

SUB CODE: NP

NR REF SOV: 006

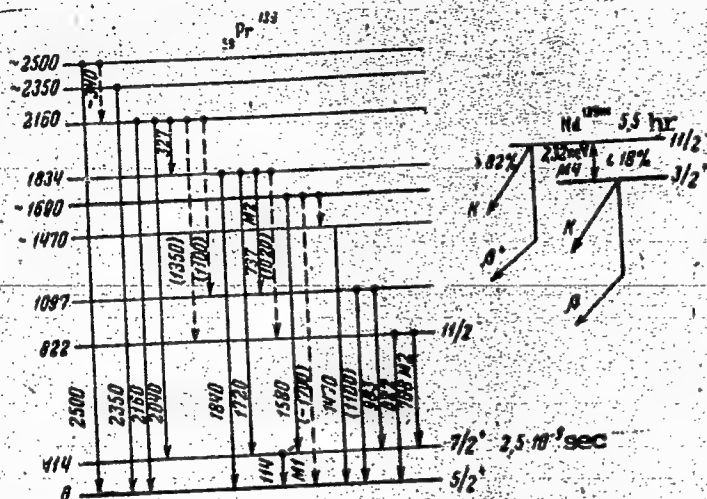
OTHER: 004

Card 3/5

L 16095-65  
ACCESSION NR: AP5000308

ENCLOSURE: 01

Fig.1. Decay scheme of  $\text{Nd}^{139\text{m}}$

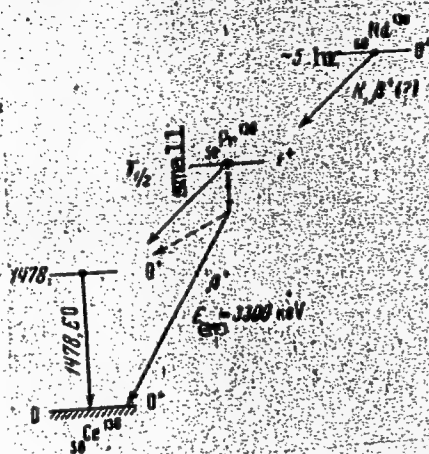


Card 4/5

L 16095-65  
ACCESSION NR: AP5000308

ENCLOSURE: 02

Fig. 2. Decay scheme of the  $Ni^{138} \rightarrow Pr^{138} \rightarrow$   
 $+ Ce^{138}$  chain



Card 5/5

KOMISSAROVA, V.A.; SCROKIN, A.A.; SHPINEL', V.S.

Angular distribution of the resonance scattering of 23.8 Kev. gamma quanta by  $\text{Sn}^{119}$  nuclei. IAd. fiz. 1 no.4:621-624 Ap '65.  
(MIRA 18:5)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

SOROKIN, A.A.; SHTAL', M.Z.; RYBAKOV, V.N.

The  $T_{e^{119}}$  decay scheme. Izv. AN SSSR.Ser.fiz. 29 no.5:819-822  
My '65. (MIRA 18:5)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M.V.Lomcnosova i Ob'yedinennyy institut yadernykh issledovaniy.

KRYUKOVA, L.N.; KORDYUKOVICH, V.O.; SOROKIN, A.A.; RUDENKO, N.P.

Lifetime of the 55Kev. state in the Ir<sup>188</sup> nucleus. Izv. AN SSSR. Ser.  
fiz. 29 no.7:1089-1091 J1 '65. (MIRA 18:7)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo  
gosudarstvennogo universiteta im. M.V.Lomonosova.



L 23740-66 EWT(m)/T  
ACC NR: AP6014817

SOURCE CODE: UR/0367/65/001/004/0621/0624

AUTHOR: Komissarova, V. A.; Sorokin, A. A.; Shpinel', V. S. --- Shpinel, V. S. 36  
B

ORG: none

TITLE: Angular distribution of resonance scattering of 23.8-KEV sub gamma-quanta on Sn sup 118 nuclei 19

SOURCE: Yadernaya fizika, v. 1, no. 4, 1965, 621-624

TOPIC TAGS: angular distribution, resonance scattering, tin, gamma quantum, particle interaction, resonance absorption

ABSTRACT: The angular distribution of the resonance scattering of 23.8-kev  $\gamma$ -rays on Sn<sup>119</sup> nuclei, bound in the lattices of the compounds Mg<sub>2</sub>Sn and SnO<sub>2</sub>, have been measured and found equal to  $W(\theta) = 1 + (0.26 \pm 0.03)P_2(\cos \theta)$  and  $W(\theta) = 1 + (0.123 \pm 0.012)P_2(\cos \theta)$  respectively. The curve for Mg<sub>2</sub>Sn corresponds to a nonperturbed correlation; and that for SnO<sub>2</sub>, to a weakened one due to the quadrupole interaction, in which the relative magnitude of this interaction is  $E/\Gamma = 1.4 \pm 0.4$ . This is in agreement with data in literature obtained from resonance absorption spectra. The authors thank L. Akhverdovaya for assistance with the measuring and L. V. Chistyakov for the chemical cleaning of the sources. Orig. art. has: 2 figures. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 26Aug64 / ORIG REF: 004 / OTH REF: 002

Card 1/106

L 30031-66 EWT(m)

ACC NR: AF6020114

SOURCE CODE: UR/0367/66/003/002/0313/0315

AUTHOR: Mokhodov, V. N.; Rybakov, V. N.; Sorokin, A. A.; Shtal', M. Z. 37

ORG: Joint Institute for Nuclear Research (Ob'yedinenyy institut yadernykh issledovaniy); Institute of Nuclear Physics, Moscow State University (Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta) B

TITLE: Ratio of <sup>119</sup>Te isomer yields in the disintegration of I and Cs by 660 MeV protons

SOURCE: Yadernaya fizika, v. 3, no. 2, 1966, 313-315

TOPIC TAGS: isomer, tellurium, proton, nuclear spin, probability

ABSTRACT: The ratios of the probabilities for the creation of high and low-spin states have been measured for <sup>119</sup>Te and <sup>121</sup>Te isomers, obtained in the disintegration of Cs and I by 660 MeV protons. For <sup>119</sup>Te these ratios are  $0.4 \pm 0.03$  and  $0.77 \pm 0.07$ ; and for <sup>121</sup>Te,  $0.65 \pm 0.07$  and  $1.1 \pm 0.13$ . Orig. art. has: 1 figure and 1 table.  
[Based on authors' Eng. abstr.] [JPRS]

SUB CODE: 20 / SUBM DATE: 20Jul65 / ORIG REF: 006 / OTH REF: 011

Card 1/1 *Jo*

L 36459-66 EWT(1)/EWT(m) IJP(c)

ACC NR: AP6018799

SOURCE CODE: UR/0056/66/050/005/1205/1217

AUTHOR: Komissarova, B. A.; Sorokin, A. A.; Shpinel', V. S.

ORG: Institute of Nuclear Physics, Moscow State University (Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Quadrupole interaction and anisotropy of the Mossbauer effect as deduced from observations of resonance scattering of  $\gamma$  quanta on polycrystals

SOURCE: Zh eksper i teor fiz, v. 50, no. 5, 1966, 1205-1217

TOPIC TAGS: polycrystal, crystal anisotropy, angular distribution, Mossbauer effect, resonance scattering, quadrupole interaction

ABSTRACT: The magnitude of quadrupole interaction of  $\text{Sn}^{119}$  nuclei in the lattice of white tin has been determined by studying the attenuation of the angular distribution of Mossbauer scattering. The values obtained are  $E_Q/\Gamma = 0.58 \pm 0.20$ ,  $\Delta = 0.18 \pm 0.6 \text{ mm/sec}$  at 300K and  $E_Q/\Gamma = 0.82 \pm 0.15$ ,  $\Delta = 0.25 \pm 0.05 \text{ mm/sec}$  at 80K, where  $\Gamma$  is the width of the nuclear level and  $\Delta$  is the hyperfin

Card 1/2

L 36459-66

ACC NR: AP6018799

5  
splitting. The effect of anisotropy of the Mossbauer effect in crystals on the angular distributions of resonance scattering during excitation of individual components of the allowed quadrupole doublet has been theoretically examined. It has been shown that it is possible to determine both the value and the sign of the anisotropy effect and the sign of the quadrupole interaction from angular distribution functions, even when the measurements are carried out on polycrystalline samples. The effect of anisotropy of the Mossbauer effect has been experimentally detected in measurements of the angular distributions for the quadrupole doublet components in the  $(C_4H_9)_2SnO$  compound. The authors thank L. D. Blokhintsev and N. N. Delyagin for their discussions and valuable advice, K. P. Mitrofanov and A. N. Karasev for their assistance in measurements of the absorption spectrum and A. S. Mogilev for developing a system of a shifting source. Orig. art. has: 1 figure, 17 formulas, and 2 tables. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 14Dec65/ ORIG REF: 012/ OTH REF: 007

Card 2/2 *JS*

L 09230-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG  
ACC NR: AP7002799 SOURCE CODE: UR/0048/66/030/008/1360/1363

AUTHOR: Kryukova, L. N.; Kordyukovich, V. O; Sorokin, A. A. 20,

ORG: Scientific Research Institute of Nuclear Physics, Moscow State University im.  
M. V. Lomonosov (Nauchno-issledovatel'sk. institut yadernoy fiziki Moskovskogo  
gosudarstvennogo universiteta)

TITLE: Lifetimes of the lower excited states of  $\text{Ir}^{189}$  /9

SOURCE: AN SSSR. Izvestiya. Soriya fizicheskaya, v. 30, no. 8, 1966, 1360-1363

TOPIC TAGS: deformed nucleus, iridium 11

ABSTRACT: To verify the assumption that the lower excited states of  $\text{Ir}^{189}$  may be regarded as levels of a deformed nucleus which represent a system of two rotational bands based on single-particle Nilsson states  $3/2^+/402/$  and  $1/2^+/400/$ , the lifetimes of the first and second excited levels of  $\text{Ir}^{189}$  (with energies of 94 and 113 keV) were measured. The source used was a Pt fraction chemically isolated from a proton-irradiated Au target. The lifetimes were measured by means of  $\alpha\gamma$ -coincidence spectrometer. Pulses from the photomultiplier anodes were transmitted to a time-amplitude converter. Findings: For the 94-keV level it was found that  $T_{1/2}(\text{M1})$  1.36  $10^{-9}$  sec and  $T_{1/2}(\text{E2})$  9.6  $10^{-9}$  sec. These findings strengthen the theory that the 94-keV level is chiefly a single-particle (proton) level and the 113-keV level is the second rotational term of the fundamental rotational band with  $K = 3/2$ .

Orig. art. has: 4 figures. [JPRS: 39,040]

Card 1/1ml SUB CODE: 20 / SUBM DATE: none / ORIG REF: 003 / OTH REF: 006

1925-1687

S/153/62/005/006/014/015  
E071/E333

AUTHORS: Budanov, V.V. and Sorokin, A.A.  
TITLE: Kinetic method of determining microadmixture of iron in concentrated nitric acid  
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, v. 5, no. 6, 1962, 999 - 1001  
TEXT: A kinetic method of determining traces of iron in concentrated nitric acid, based on the catalytic action of iron on the reaction of oxidation of methylorange with hydrogen peroxide, was developed. The duration of the analysis was 1.5 h. The minimum determinable amount of iron was  $10^{-5}$ % on the weight of the acid. The experimental procedure is described in some detail. There are 2 figures and 1 table.  
ASSOCIATION: Kafedra fizicheskoy i kolloidnoy khimii, Ivanovskiy khimiko-tekhnologicheskii institut (Department of Physical and Colloid Chemistry, Ivanovo Institute of Chemical Technology)  
SUBMITTED: October 18, 1961  
Card 1/1

ELGOTCH, A.I.; SOMKIN, A.A.; MEN'SHOV, Yu.A.

Radiation reflected from the surface of the open ocean. Izv.  
AN SSSR Ser. geofiz. no.10:1578-1583 O '64.

(MIRA 17:11)

SOROKIN, A.A.

*Metal* ✓ Use of a Protective Heat-Resisting Section Before a Needle Recuperator. B. L. Poletaev and A. A. Sorokin, (Steel), 1936, (10), 945-947. [In Russian]. An account is given of tests on the recuperator of a continuous furnace dealing with flue and air temperatures of 850° and 200° C respectively. The cast iron needle recuperator was found to fail mainly through thermal shocks produced by interruptions of mill operation or increases in operating rates. These shocks were largely eliminated by introducing a pre-cooling section made of heat-resisting steel (0.14% C, 0.57% Mn, 0.59% Si, 33.15% Cr, 0.22% Ni, 0.018% S, 0.035% P), in which the temperature was reduced by 200-300° C. With the protective section the air temperature could be safely increased from 200 to 300-300° C.—A. K.

2



SOROKIN, A. A.

*Metall* 5  
 ✓ Blowing of powdered coal through tuyeres into the hearth of blast furnaces. V. I. Logovskiy, G. G. Orshkin, G. G. Polovchenko, A. A. Sorokin, and I. N. Kantasovich. (Met. Inst. and Works, Dnepropetrovsk). *Metallurg.* 1956, No. 4, 10-12. — Powd. anthracite coal contg. 16-18% ash and 1.7-3% S, heat content 6000 cal./kg., was successfully blown-in in a small exptl. furnace smelting iron and ferro-silicon. The ash contained <50%  $SiO_2$  and 23%  $Al_2O_3$  and was relatively easily melted; 92-4% of the coal particles were less than 0.060 mm. Blowing at the rate of 1000 kg./hr. (16% moisture) of powd. coal with 0.5% of the total air stream with a mean temp. of 800° was necessary to raise the stream temp. 50-60°. The Si concn. of iron did not change, while S dropped from 0.03-0.04 to 0.02-0.025%. Blown-in pulverized coal can replace 5-6% of total coke.  
 V. N. Bednarski

SOROKIN, A. A.

**Injection of Powdered Fuel into the Blast-Furnace Hearth.**

I. Loginov, G. G. Orshkov, L. G. Polovnikov, A. A. Sorokin, and L. N. Barbasovskii. (Sov. 1956, (8), 75-83).

[In Russian]. An account is given of trials on a relatively small (427 m<sup>3</sup> useful volume) blast furnace smelting ferro-silicon in which low-grade anthracite dust was injected through the tuyeres with the aid of a special installation. In some of the trials gas sampling of the combustion zone with and without the injection was carried out. 20 t/hr of the powdered fuel could be injected without difficulty, equivalent savings in coke being achieved. In spite of the high (16-18%) ash and sulphur (1.7-3%) contents of the fuel the ferro-silicon quality improved and the furnace continued to function smoothly. —S. R.

RE any

SOROKIN, A. A.

17 18 4E2C  
✓ Experiments on the Calcination of Limestone on a Sintering Machine. T. A. Kravtsov and A. A. Sorokin. (Sov. 1958, (9), 774-776). (In Russian). It is claimed that laboratory and full-scale experiments have confirmed that even if the calcination of limestone is carried out on the strand the loss of machine time is more than compensated for by the greater sintering speed obtained with lime additions.—S. S.

SOROKIN, A.A., inzhener; POLETAYEV, B.L.

The performance of recuperator pits without filling of small coke.  
Stal' 16 no.3:247-252 Mr '56. (MIRA 9:7)

1. Zaved imeni Dzerzhinskego.  
(Dnepredzerzhinsk--Heat regenerators)

SOROKIN, A. R.

Blowing coal dust into the hearth of blast furnaces. V. I. Loginov, G. G. Oreshkin, I. G. Polovchenko, A. A. Sorokin, and I. N. Kardashevich (Dzerzhinskii Met. Plant, Dneprodzerzhinsk). *Sov.* 16, 675-82(1964); cf. *C.A.* 50, 10620a. — Powd. anthracite refuse carrying 18% ash and 1.7-3.0% S was blown into the hearth of a 427-cu. m. furnace through 1-4 tuyeres from a tank. In a 4-day run up to 30 tons of dust was blown in 1 hr. while raising blast temp. to 800° in place of conventional 700° and appropriately adjusting the coke charge. The furnace, which ran on FeSi, operated smoothly, coke consumption and S decreased, while slag basicity and Si content of FeSi increased. The dust replaced 5-8% of coke with its equal amt. It began to burn directly after leaving the tuyere nozzle, and the temp. of the combustion zone decreased markedly. J. D. Gai

KRAMNIK, T.A., kandidat tekhnicheskikh nauk.; SOROKIN, A.A., inzhener.

Experiments in burning limestone in the sintering plant. Stal' 16 no.9:  
774-776 S '56. (MLRA 9:11)

1. Zavod imeni Dzerzhinskogo.  
(Blast furnaces) (Limestone)

SOROKIN, A.A.

Largest plant in the South. Metallurg 2 no.11:25-30 N '57.  
(MIRA 12:2)

1. Nachal'nik tekhnicheskogo otdela Metallurgicheskogo zavoda  
im. Dzerzhinskogo, g.Dneprodzerzhinsk, Ukraina.  
(Dneprodzerzhinsk--Metallurgical plants)

AFANAS'YEV, S.G.; KOSTENETSKIY, O.N.; SHUMOV, M.M.; IVANOV, Ye.V.; PAVLOV, A.I.; GARGER, K.S.; KRIVULYA, G.D.; UMNOV, V.D.; UL'YANOV, D.P.; MAMCHITS, K.A.; PETROV, S.A.; ~~SOROKIN, A.A.~~; FRIDMAN, Ye.L.; EPSHTEYN, Z.D.; IVANTSOV, G.P.; NETESIN, A.Ye.

Reports (brief annotations). Biul. TSNIICM no.18/19:106-107 '57.  
(MIRA 11:4)

1. Zavod im. Petrovskogo (for Kostenetskiy). 2. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Shumov, Epshteyn, Ivantsov). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut ogneporov (for Ivanov). 4. Stal'proyekt (for Pavlov). 5. Metallurgicheskiy zavod im. Dzerzhinskogo (for Garger, Krivulya, Umnov, Ul'yanov, Mamchits, Petrov, Sorokin). 6. Dnepropetrovskiy filial Gipromeza (for Fridman). 7. TSentral'nyy institut informatsii chernoy metallurgii (for Netesin)  
(Bessemer process)



AUTHORS: Tayts, N. Yu. Doctor of Technical Science, 133-58-5-30/31  
Rozengart, Yu. I., Candidate of Technical Science,  
Sorokin, A. A., Engineer, and Poletayev, B. L., Candidate  
of Technical Science

TITLE: High Temperature Preheating of Air in Radiation  
Recuperators (Vysokotemperaturnyy podogrev vozdukh  
v radiatsionnykh rekuperatorakh)

PERIODICAL: Stal', 1958, Nr 5, pp 472-479 (USSR)

ABSTRACT: The object of the paper is to give a theoretical analysis  
of heat exchange conditions in radiation recuperators in  
order to develop a method for their design calculations  
and the choice of optimal schemes of radiation  
recuperators for soaking pits. Theoretical equations  
for the determination of heat exchange in recuperators  
are given. On the basis of the equations four different  
schemes of radiation recuperators are compared:  
1 - direct current recuperator with heating from two sides;  
2 - counter-current recuperator with heating from two sides;  
3 - direct current recuperator with heating on one side and  
4 - counter-current recuperator with heating on one side.  
It is concluded that for soaking pits the first scheme

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133-58-5-30/31

# High Temperature Preheating of Air in Radiation Recuperators

is the most advantageous. An experimental recuperator (Fig.7) was designed and its operation investigated. The results of one heating with cold charge are shown in Fig.8. The preheating of air reached  $650^{\circ}\text{C}$  and the coefficient of heat transfer  $45 \text{ K cal/m}^2\text{hr}^{\circ}\text{C}$ . The resistance of the whole air duct at  $2500 \text{ m}^3/\text{hr}$  was about  $450 \text{ mm H}_2\text{O}$ . Some deficiencies in the operation were noted: the destruction of welded joints and non-uniform heating of the surface of the tubes due to a non-uniform distribution of air. A second recuperator is being designed in which the above deficiencies will be removed.

There are 2 tables and 9 figures.

ASSOCIATIONS: Dnepropetrovskiy metallurgicheskiy institut  
(Dnepropetrovsk Metallurgical Institute),  
Zavod im. Dzerzhinskogo (Plant imeni Dzerzhinskiy)

Card 2/2

SOROKIN, A.A.

133-58-3-25/29

AUTHORS: Tseytlin, L.A., Candidate of Technical Sciences,  
Sorokin, A.A., Filichkin, M.F. and Buntman, N.F.,  
Engineers.

TITLE: Thermal Insulation of Sliding Tubes in Heating Furnaces  
(Teplovaya izolyatsiya glissazhnykh trub nagrevatel'nykh  
pechey)

PERIODICAL: Stal', 1958, <sup>18</sup>Nr 3, pp 262 - 266 (USSR)

ABSTRACT: The results of tests of three types of thermal insulation of sliding tubes are described. The experiments were carried out on two continuous reheating furnaces of up to 30 ton/hour throughput fired with a mixture of coke oven and blast furnace gas. Mean weight of heated ingots 300-250 kg. The following types of insulation were tested: I) Monolithic, placed on tubes with welded pins (Fig.1). The insulation in the soaking part was made from chrome-magnesite concrete on alumina cement and from chromite mass on soluble glass and in the heating part from chamotte concrete on aluminous cement or puzzolane Portland cement. II) Suspended blocks (Fig.2). Blocks were suspended from strips welded to the tubes. In the soaking part chamotte-kaolinite, high aluminous and magnesite chromite fired blocks were used and in the heating part - chamotte-kaolinite. The composition and properties of these

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*Sch. 11, II.*

PHASE I BOOK EXPLOITATION

SOV/4380

Zavod imeni Dzerzhinskogo, Dneprodzerzhinsk

Metallurgi v bor'be za tekhnicheskii progress (Metallurgists in the Fight for Technical Progress) [Moscow] Izd-vo VTsSPS Profizdat 1959 56 p. 3,000 copies printed.

Special Eds.: Ye. V. Kochinev, F.M. Novikova, and I.B. Polyak; Ed.: E.A. Makarova; Tech. Ed.: N.D. Shadrina.

"PURPOSE: This book is intended for technical personnel interested in metallurgical processes.

COVERAGE: The book contains 9 articles dealing with technical improvements developed and implemented by members at the Plant imeni Dzerzhinskiy, Dneprodzerzhinsk of the Nauchno-tekhnicheskoye obshchestvo chernoy metallurgii (Scientific and Technical Society for Ferrous Metallurgy). Individual articles discuss techniques in limestone kilning, blast-furnace charges, intensification of open-hearth processes, ingot rolling, and improvements in rail production.

Card 1/3

Metallurgists in the Fight for Technical Progress

SOV/4380

Kuznetsov, M. [Engineer]. Improving the Quality of Rails  
Made of Bessemer Steel

34

Karpunin, A. [Engineer]. Heat Treatment of Rails

40

Nikitskaya, V. [Engineer]. A New Steel for Rolling Tin Plate

47

Poletayev, B. [Manager of Heat-Engineering Laboratory].  
Improvement in the Design of Recuperator Soaking Pits

51

AVAILABLE: Library of Congress (TN705.Z3)

Card 3/3

AC/dvm/mas  
11-15-60

78(3)

AUTHORS:

Rozengart, Yu. I., Tayts, N. Yu.,  
Sorokin, A. A., Poletayev, B. L.

SOV/163-59-1-17/50

TITLE:

Investigation of the Performance of a Slit Radiation Regenerator  
(Issledovaniye raboty shchelevogo radiatsionnogo rekuperatora)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1,  
pp 80-84 (USSR)

ABSTRACT:

At present slit radiation regenerators are used to a large extent. They are composed of two cylinders. The combustion gases pass through the inside cylinder, the air streams through the annular duct between the cylinders. The Dnepropetrovskiy metallurgicheskii institut (Dnepropetrovsk Institute of Metallurgy) in collaboration with the metallurgicheskii zavod im. Dzerzhinskogo (Metallurgical Plant imeni Dzerzhinskiy) designed a slit radiation regenerator for soaking pits. This type of regenerator differs from others described in publications by the feature of being provided with a bilateral heating of the walls. This is accomplished by a flue gas duct in the inside tube of the regenerator and between the outside tube and the regeneration chamber. The theoretical investigation (Ref 1) showed that by this method

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Investigation of the Performance of a Slit Radiation Regenerator SOV/163-59-1-17/50

of heating the efficiency of the regenerator is considerably increased. A test unit was erected in the above-mentioned works for the purpose of studying the regenerator in question. It was composed of a furnace with two interconnected chambers, a combustion chamber, and a regeneration chamber. The air supply of the test unit was provided by two VVD-8 high-pressure fans with 20 kw electric motors. The slit radiation regenerator with a heating surface of  $21.6 \text{ m}^2$ , intended for use with soaking pits and with a rated capacity of  $2500 \text{ m}^3/\text{hour}$  of air heated to a temperature of up to  $700^\circ$  was constructed of 5.5 mm BL417 steel sheet. The investigations were carried out at different temperatures of the flue gases entering the regenerator (varying between  $800$  and  $1300^\circ$ ) with unilateral and bilateral heating and an uniflow direction of the flue gases and of the air. A counterflow arrangement of air and the flue gases at gas temperatures of  $800$ ,  $900$ , and  $1000^\circ$  with bilateral heating was also investigated. V. A. Epshteyn, Engineer, and I. I. Kharybin assisted in the experiments. It was found that the regenerator tested operates with a high thermal efficiency within a wide range of gas temperature.

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Investigation of the Performance of a Slit Radiation Regenerator SOV/163-59-1-17/50

The investigations substantiated the conclusions drawn from theoretical considerations concerning the high efficiency of such a regenerator with bilateral heating. The engineering data obtained for a wide range of flue gas temperature (from 800 to 1300°) indicate the advantages of using such regenerators in this range of flue gas temperatures. The experiments at the test stand are at present continued. The problem of the optimum flue gas distribution between the inside and the outside duct is investigated. The Dnepropetrovsk Institute of Metallurgy and the Stal'proyekt are at present engaged in developing a multi-tube type of radiation regenerators. There are 5 figures, 1 table, and 2 Soviet references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Institute of Metallurgy)

SUBMITTED: June 27, 1958

Card 3/3



SOV/135-59-3-7/32

AUTHORS: Koburneyev, I.M., Petrov, S.A., Sorokin, A.A. and  
Timoshpol'skiy, I.S., Engineers

TITLE: A Rational Method of Feeding Compressed Air (Ratsional'nyy  
podvod kompressornogo vozdukha)

PERIODICAL: Stal', 1959, Nr 3, pp 212 - 214 (USSR)

ABSTRACT: In order to improve the state of flame in gas-fired  
185-ton and 370-ton open-hearth furnaces at the above  
works, a supply of compressed air (up to 2 000 nm<sup>3</sup>/h)  
through the water-cooled tuyeres situated on both sides  
of the gas port was introduced. Alternatively, a compressed  
air (600 - 800 nm<sup>3</sup>/h) through Laval nozzles was supplied  
to ejectors placed at the end of the gas port. This  
measure increased the output of the furnaces by 3% and  
decreased the consumption of fuel by 2-3%. In 1956, the  
supply of compressed air to 85-ton furnaces was modified;  
namely, it was introduced into the flame through three  
sections of tubes situated along the port (Figure 1).  
This mode of supplying air increased the output by 8-10%  
and decreased the consumption of fuel by 6-8%.  
Simultaneously due to a better control of the flame the  
durability of roofs increased. The comparison of operating

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SOV/133-59-3-7/32

A Rational Method of Feeding Compressed Air

indices without and with the use of compressed air is shown in Tables 1 and 2. It is thought that a similar supply of oxygen may be particularly beneficial. In this case, it would be sufficient to supply oxygen through 2-3 streams situated on both sides of the flame, where-upon the bottom streams would act on the bath, speeding up the steel-making process and particularly the decarburisation of the bath. In order to protect the roof from the action of the flame it would be advantageous to supply compressed air through the tubes of the upper section (Figure 3). There are 2 tables and 3 figures.

ASSOCIATION: Zavod im. Dzerzhinskogo (im. Dzerzhinskiy Works)

Card 2/2

SOROKIN, A. (g.Dneprodzerzhinsk)

Research brigades at a steel plant. NTO no.7:26-27 Jy '59.  
(MIRA 12:11)

1. Zamestitel' predsedatelya soveta pe: vichnoy organizatsii  
nauchno-tekhnicheskogo obshchestva chernoy metallurgii.  
(Dneprodzerzhinsk--Steel industry)

ALEKSANDROV, P.A., doktor.tekhn.nauk; BESEDIN, P.T., kand.tekhn.nauk;  
FILONOV, I.G.; SOROKIN, A.A.; KARPUNIN, A.M.; CHEPELEV, P.P.

Tempering rail heads along the total length. Put' i put.khoz. 4  
no.8:15-16 Ag '60. (MIRA 13:7)

1. Ukrainskiy institut metallov (for Aleksandrov, Besedin).
2. Glavnyy inzhener Metallurgicheskogo zavoda im. Dzerzhinskogo  
(for Filonov). 3. Nachal'nik tekhnicheskogo otdela Metallurgicheskogo  
zavoda im. Dzerzhinskogo (for Sorokin). 4. Nachal'nik metal-  
lurgicheskogo zavoda im. Dzerzhinskogo (for Karpunin). 5. Nachal'nik  
rel'sobalochnogo tsekha Metallurgicheskogo zavoda im. Dzerzhinskogo  
(for Chepelev).

(Railroads--Rails)  
(Tempering)

BESEDIN, P.T.; ORESHKIN, G.G.; SOROKIN, A.A.; KARPUNIN, A.M.; CHEPELEV,  
P.M.; VASIL'YEV, A.F.; KUTSENKO, A.D.

Mastering and introducing at the Dzerzhinsk Plant normalizing and  
sorbitizing practices for rails along their entire length. Stal'  
20 no.10:946-953 0 '60. (MIRA 13:9)

1. Zavod im. Dzerzhinskogo i Ukrainskiy nauchno-issledovatel'skiy  
institut metallov.

(Railroads--Rails)  
(Dneprodzerzhinsk--Annealing of metals)

GOL'DFARB, E.M., inzh.; TAYTS, N.Yu., inzh.; LEGOVETS, L.V., inzh.;  
SOROKIN, A.A., inzh.; CHECHURO, A.N., inzh.; POLETAYEV, B.L., inzh.;  
YAROSHEVSKIY, N.D., inzh.

Increasing the heat capacity of blast furnace air preheaters.

Biul.TSIICHM no.4:9-13 '61.

(MIRA 14:10)

(Blast furnaces)

(Air preheaters)

GARBER, K.S., dotsent; NIKITIN, A.I.; LYAUDIS, B.V.; MALINOVSKIY, B.N., kand. tekhn.nauk; BEL'SKIY, O.I.; VOLKOV, L.G.; KUZNETSOV, M.P.; KUTSENKO, A.D., SOROKIN, A.A.; STAKHURSKIY, A.D.; TRUBITSYN, L.M.; TRUSEYEV, A.I.; SHAFRAN, I.K., inzh.; SHESTAK, P.I.; UL'YANOV, D.P.

Automatic control of converter smelting by means of compu' rs.  
Stal' 23 no. 7:608-610 J1 '63. (MIRA 16:9)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz im. M.I. Arsenicheva (for Garger). 2. Institut kibernetiki AN UkrSSR (for Malinovskiy). 3. Zavod im. Dzerzhinskogo (for Shafran).

ROZENGART, Yu.I., kand.tekhn.nauk, dotsent; TAYTS, N.Yu., doktor tekhn.nauk, prof.; SPIVAK, E.I., inzh.; SOROKIN, A.A., inzh.; POLETAYEV, B.L., kand.tekhn.nauk; KLIMENKO, G.P., inzh.; KOROTAYEV, M.M., inzh.; STRUCHENEVSKIY, B.B., inzh.

Investigating the performance of holding furnaces for nonoxidizing heating. Stal' 23 no.9:848-853 S '63. (MIRA 16:10)

1. Dnepropetrovskiy metallurgicheskiy institut, TSentroenergochermet, zavod im. Dzerzhinskogo i Gosudarstvennyy soyuznyy institut po proyektirovaniyu agregatov stalelitateynogo i prokatnogo proizvodstva dlya chernoy metallurgii.



AKINFIYEV, V.I.; ZAKURDAYEV, A.G.; SHARONOV, G.Ye.; SOROKIN, A.A.;  
CHEVELA, L.A.

Mechanism and the kinetics of processes taking place in the bath  
of a basic open-hearth furnace in scrap and hot metal practice.  
[Sbor. trud.] TSNIICHM no.29:73-102 '63. (MIRA 17:4)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii  
(for Akinfiyev, Zakurdayev, Sharonov). 2. Dneprovskiy  
metallurgicheskiy zavod imeni Dzerzhinskogo (for Sorokin, Chevela).

DUSHIN, Aleksandr Il'ich; SOROKIN, Anatoliy Alekseyevich;

[Projecting holes on the basis of the regularities of  
their natural curvature] Proektirovanie skvazhin na  
osnove zakonornostei ikh estestvennogo iskrivleniia.  
Moskva, Nedra, 1964. 87 p. (MLRA 18:1)

ROZENGART, Yu.I.; TAYTS, N.Yu.; SPIVAK, E.I.; SOROKIN, A.A.;  
POLETAYEV, B.L.

Effect of sulfur on metal loss during heating. Izv. vys.  
ucheb. zav.; chern. met. 7 no.2:177-182 '64.

(MIRA 17:3)

1. Dnepropetrovskiy metallurgicheskiy institut, TSentro-  
energometallurgprom i zavod im. F.E. Dzerzhinskogo.

KRAVTSOV, A. F.; ALEKSEYEV, B. G.; POLETAYEV, B. L.; SOROKIN, A. A.

Pulse regulation of temperature in soaking pits. Izv. vys.ucheb.  
zav; chern.met.7 no. 5:170-176 '64. (MIRA 17:5)

1. Denpropetrovskiy metallurgicheskiy institut i Metallurgicheskiy zavod im. Dzerzhinskogo.

ZORIN, O.D.; SOROKIN, A.A.

Investigating the participation of an open-hearth furnace  
atmosphere in the oxidation of carbon. Izv. vys. ucheb.  
zav.; chern. met. 7 no.9:43-47 '64. (MIRA 17:6)

1. Institut avtomatiki Gosplana UkrSSR.

POLETAYEV, B.L.; RESHETNYAK, I.S.; SHAPOVALOV, N.A.; SOROKIN, A.A.

Using an accumulative ceramic recuperator in soaking pits at the  
Dzerzhinskii Plant. Stal' 24 no.2:180-181 F '64. (MIRA 17:9)

1. Zavod im. Dzerzhinskogo i Dneprodzerzhinskiy metallurgicheskiy  
zavod-vtuz.

PARIMONCHIK, I.B., inzh.; SOROKIN, A.A., inzh.; KUTSENKO, A.D., inzh.;  
KARPUNIN, A.M., inzh.; PAVLOVITSEVA, N.I., kand. tekhn. nauk;  
KOBURNEYEV, I.M., inzh.; YAKOVLEV, Yu.N., kand. tekhn. nauk;  
TRUSEV, A.I., inzh.; ORGIYAN, V.S., inzh.

Improving the flow during metal pouring. Stal' 24 no.5:  
425-426 My '64. (MIRA 17:12)

BESEDIN, P.T.; SOROKIN, A.A.; FILONOV, I.G.; KARPUNIN, A.M.;  
CHEPELEV, P.M.; SHCHERBINA, P.A.; AVDEYEV, M.G.; KUTSENKO,  
A.D.; TSELYUKO, V.I.; CHERNEVICH, Ye.M.; ORGIYAN, V.S.;  
CHERNETA, Z.A.

Improving the technology of the heat treatment of rails  
at the Dzerzhinskii Plant for the purpose of increasing  
their durability in tracks. Stal' 24 no.5:445-448 My '64.  
(MIRA 17:12)

1. Dneprovskiy metallurgicheskii zavod im. Dzerzhinskogo i  
Ukrainskiy nauchno-issledovatel'skiy institut metallov.



SOROKIN, A.A., inzh.

New trends in the expansion of regenerative soaking pits.  
Stal' 24 no.5:459-461 My '64. (MIRA 17:12)

1. Dneprovskiy metallurgicheskiy zavod im. Dzerzhinskogo.

ROZENGART, Yu.I., dotsent, kand. tekhn. nauk; TAYTS, N.Yu., prof.,  
doktor tekhn. nauk; SOROKIN, A.A., inzh.; POLETAYEV, B.L.,  
kand. tekhn. nauk

Expansion of research on the nonscale heating of metal at  
the Dzerzhinskii Plant. Stal' 24 no.5:462-466 My '64.  
(MIRA 17:12)

1. Dnepropetrovskiy metallurgicheskii institut i Dneprovskiy  
metallurgicheskii zavod im. Dzerzhinskogo.

OYKS, G.N., doktor tekhn. nauk; BORODIN, D.I.; TSYKIN, L.V.; KAPUSTIN, I.V.;  
SOROKIN, A.A.; KUTSENKO, A.D.; ZAGREBA, A.V.; TRUSEYEV, A.A.;  
REKHLIS, G.N.

Effect of the condition of the slag on the intensity of ejections  
during the Bessemer production of steel. Met. i gornorud. prom.  
no.1:24-28 Ja-F '65. (MIRA 18:3)

OYKS, G.N., doktor tekhn. nauk; BORODIN, D.I.; TSYKIN, L.V.; KAPUSTIN, I.V.;  
SOROKIN, A.A.; KUTSENKO, A.D.; ZAGREBA, A.V.; REKHLIS, G.N.;  
TRUSEYEV, A.I.; Primali uchastiye: GUBENKO, S.M.; FOMIN, S.I.;  
KUBLITSKIY, A.M.; SAF'YANOV, V.P.; VOLYNKIN, V.M.

Some problems in the hydrodynamics of a converter bath. Met.  
i gornorud. prom. no.3:29-31 My-Je '65. (MIRA 18:11)